

## Causes and Risk Factors

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### Causes during birth and pregnancy

Cerebral palsy is not one disease with a single origin, like chicken pox or measles. It is a group of disorders that are related but probably stem from a number of different causes. When physicians diagnose cerebral palsy in an individual child, they look at risk factors, the symptoms, the mother's and child's medical history, and the onset of the disorder.

About 10 to 20 percent of children who have cerebral palsy acquire the disorder after birth, while many more cases are caused by an incident that occurs during pregnancy or birth. Acquired cerebral palsy is the result of brain damage in the first few months or years of life. Common causes of brain damage are sickness-such as bacterial meningitis, viral encephalitis, or even jaundice. Another common cause is head injury-such as from a motor vehicle accident, a fall, or child abuse. When a baby is "born" with cerebral palsy, the causes may be due to avoidable or unavoidable incidents that occurred during pregnancy or birth.

### Causes: During Pregnancy

Cerebral Palsy can also be caused by things that happen during pregnancy which cause permanent damage to the fetus.

### Prenatal Infections

Certain bacterial and viral infections can damage the fetus during pregnancy. More commonly, untreated or maltreated maternal infections can induce premature labor and delivery. These newborn babies may suffer the consequences of brain damage from infection directly, or they may be damaged as a direct result of prematurity. Sometimes the mother can be unaware of the source of the infection if it goes undetected by her health care provider. Maternal infections such as German measles (or rubella), cytomegalovirus and toxoplasmosis, can cross the placenta and infect the fetus as well, causing damage to the developing nervous system.

### Improper Dating of the Pregnancy

One of the most important influences in prenatal care is the accurate dating of a pregnancy. Ultrasounds have made the estimation of due dates far more reliable. Failure to properly date the pregnancy may result in either premature delivery or post-mature delivery, both of which may be responsible for brain damage to your newborn baby.

### Rh Incompatibility

In this blood condition, the mother's body produces immune cells called antibodies that destroy the fetus's blood cells, leading to a form of jaundice in the newborn. Severe, untreated jaundice can damage brain cells.

### Bleeding In The Brain

Bleeding in the brain has several causes, including broken blood vessels in the brain, clogged blood vessels, or abnormal blood cells. Although bleeding in the brain (or stroke) is better known for its effects on older adults, it can also occur in the fetus during pregnancy or the newborn around the time of birth, damaging brain tissue and causing neurological problems. Ongoing research is testing potential treatments that may one day help prevent stroke in fetuses and newborns.

### Causes: Birth Injury

Sometimes cerebral palsy is the result of a birth injury that causes the infant to be traumatized or deprived of oxygen (asphyxia). A number of things can cause trauma or asphyxia, including:

### Difficult forceps delivery

Difficult vacuum extraction delivery

Exceptionally long labor

Low amniotic fluid

A twisted or compressed umbilical cord

Macrosomia or a baby that is "large for gestational age"

Placental abruption

Hemorrhage

Most often when a baby is damaged, she is damaged late in labor from a continuous lack of oxygen and/or trauma. While a newborn infant's blood is specially equipped to compensate for low levels of oxygen, and asphyxia (lack of oxygen caused by interruption in breathing or poor oxygen supply) is common in babies during the stresses of labor and delivery, this ability is not infinite. If asphyxia severely lowers the supply of oxygen to the infant's brain for lengthy periods, the baby may develop brain damage called hypoxic-ischemic encephalopathy. A significant proportion of babies with this type of brain damage die. Others may develop cerebral palsy, which is then often accompanied by mental impairment and seizures.

During most labors, electronic fetal heart rate monitoring and fetal scalp pH sampling are used to assess fetal well-being and to detect fetal distress. Experts can preview the fetal heart monitoring strips and take appropriate action, often an emergency cesarean section.

Premature Delivery and Neonatal Intensive Care

Another major cause of cerebral palsy / mental retardation is premature birth. Premature labor can often be halted by medication, but it must be diagnosed at the earliest stage. Medication given to the mother can accelerate fetal lung development. Immature lungs at birth are a major factor in subsequent complications, including brain hemorrhage and death.

Risk Factors

Scientists have examined thousands of expectant mothers, followed them through childbirth, and monitored their children's early neurological development. As a result, they have uncovered certain characteristics, called risk factors, which increase the possibility a child will later be diagnosed with cerebral palsy.

Knowing these risk factors helps doctors keep a closer eye on children who may exhibit later warning signs for cerebral palsy. However, do not become too alarmed if your child has one or more of these factors. Most such children do not have and do not develop cerebral palsy.

Cerebral palsy risk factors include:

Breech presentation

Babies with cerebral palsy are more likely to present feet first, instead of head first, at the beginning of labor.

Complicated labor and delivery

Problems with the baby during labor, or a long and complicated delivery may sometimes be the first sign that a baby has suffered brain damage during the pregnancy or in the early stages of birth, or that a baby's brain has not developed normally. Additionally, the complications themselves can cause permanent brain damage in an otherwise normal baby.

Birth defects

Babies with physical birth defects-such as malformation of the spinal bones, hernia (a protrusion of organs through an abnormal opening inside the body) in the groin area, or an abnormally small jaw bone-are at an increased risk for cerebral palsy.

## Low Apgar score

The Apgar score (named for anesthesiologist Virginia Apgar) is a numbered rating that reflects a newborn's condition. To determine an Apgar score, doctors periodically check the baby's heart rate, breathing, muscle tone, reflexes, and skin color in the first minutes after birth. They then assign points (0-2 for each of the five areas); total scores closer to 10 are desirable. A low score at 10-20 minutes after delivery is often considered an important sign of potential problems.

## Low birthweight and premature birth

The risk of cerebral palsy is higher among babies who weigh less than 2500 grams (5 lbs., 7 1/2 oz.) at birth and among babies who are born less than 37 weeks gestation. This risk increases as the less the baby weighs.

## Multiple births

Twins, triplets, and other multiple births are linked to an increased risk of cerebral palsy.

## Nervous system malformations

Some babies born with cerebral palsy have visible signs of nervous system malformation, such as an abnormally small head (microcephaly). This suggests that problems occurred in the development of the nervous system while the baby was in the womb.

## Maternal bleeding or severe proteinuria late in pregnancy

Vaginal bleeding during the sixth to ninth months of pregnancy and severe proteinuria (the presence of excess proteins in the urine) are linked to a higher risk of having a baby with cerebral palsy.

## Maternal hyperthyroidism, mental retardation, or seizures

Mothers with any of these conditions are slightly more likely to have a child with cerebral palsy.

## Seizures in the newborn

An infant who has seizures at birth is at a higher risk of being diagnosed later in childhood with cerebral palsy.

## Short note about the author

Jerald Chan writes for <http://www.cerebralpalsycure.info> where you can find out more about cerebralpalsy cure and other topics.

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Author: Jerald Chan

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